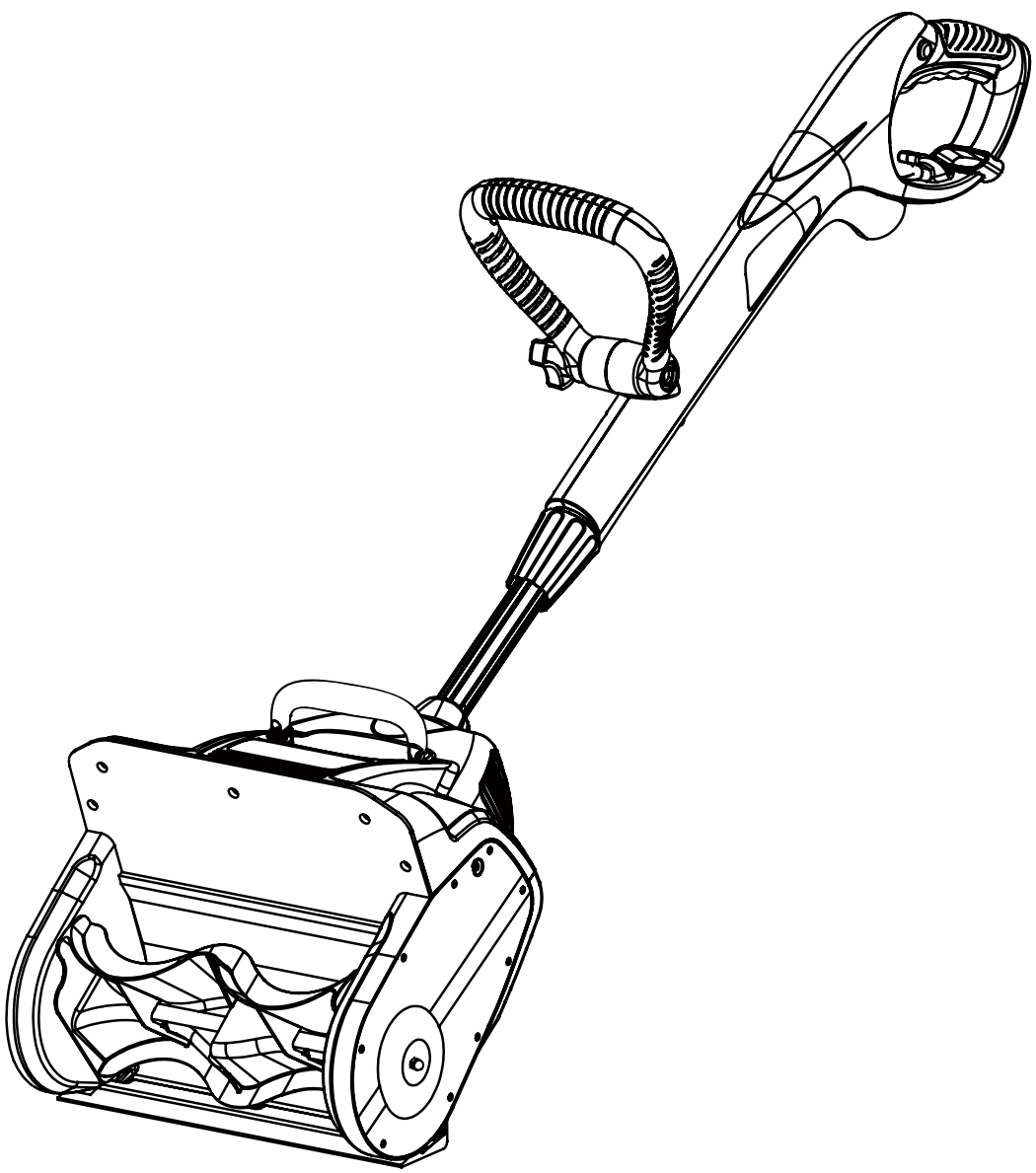
OPERATOR / PARTS MANUAL

8 Amp 12” Electric Snow Shovel

8112



⚠WARNING

CALIFORNIA Proposition 65 Warning

Battery post, terminals, wiring insulation, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.
WASH HANDS AFTER HANDLING.

IMPORTANT MESSAGE

Thank you for purchasing this Mantis product. You have purchased a world class product, one of the best designed and built anywhere.

This machine comes with an Operator / Parts Manual. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand this manual. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Mantis product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manuals thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

Mantis designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manuals, keep it in good repair and follow safety warnings and instructions. You’ll always be glad you did.

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This Operator / Parts Manual is part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

You will notice throughout this Owners Manual Safety Rules and Important Notes. Make sure you understand and obey these warnings for your own protection.

I. SPECIAL SAFETY INFORMATION

⚠WARNING

Attention: This symbol points out our important safety instructions. When you see this symbol⚠, heed it's warning !! Stay alert !!

⚠WARNING

To reduce the potential for accidents, comply with the safety instructions in this manual. Failure to comply may result in serious personal injury, and/ or equipment and property damage.

II. SAFETY & WARNINGS

⚠WARNING

Improper use or care of this machine or failure to wear proper protection can result in serious injury. Read and understand the rules for safe operation and all instructions in this manual. Wear hearing and eye protection.

III. SAFETY DECAL INFORMATION

An important part of the safety system incorporated in this snow shovel are the warning and information decals found on various parts of the snow shovel. These decals must be replaced in time due to abrasion, etc. It is your responsibility to replace these decals when they become hard to read.

Precautions that involve your safety.

Read Operator/ Parts Manual before using snow shovel, or performing any repair or maintenance. Keep owner's manual in a safe place.

Wear eye protection when operating this machine.

Pay attention that bystanders are not injured through foreign objects thrown from the snow shovel.

Keep hands and feet away from rotating parts.

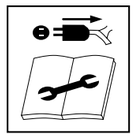
Do not expose to rain or use in damp locations.

Keep all bystanders (especially children and pets) at least 100 ft. away from the work area.

Do not operate on inclines greater than 15°.

Keep hands away from the collector/ impeller.

Danger - Keep feet away from the collector/impeller.



The power supply must be disconnected before carrying out cleaning or maintenance. Shut off the motor before unclogging the discharge shute.

Mantis
Safety Rules & Warnings

IV. SAFETY RULES

This machine is NOT intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the machine by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the machine.

TRAINING

1. Read the operating and service instruction manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know to stop the unit and disengage the controls quickly.
2. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
3. Keep the area of operation clear of all persons, particularly small children, and pets.
4. Exercise caution to avoid slipping or falling, especially during operation.

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards, wires, and other foreign objects.
2. Do not operate the equipment without wearing adequate winter garments. Wear footwear, which will improve footing on slippery surfaces.

OPERATION

1. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
2. Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
3. After striking a foreign object, stop the motor, disconnect the power supply, thoroughly inspect the snow shovel for any damage, and repair the damage before restarting and operating the snow shovel.
4. If the unit should start to vibrate abnormally, stop the motor, disconnect the power supply and check immediately for the cause. Vibration is generally a warning of trouble.
5. Stop the motor and disconnect the power supply, before unclogging the collector/impeller housing or discharge guide, and when making any repairs, adjustments, or inspections.
6. When cleaning, repairing, or inspecting, make certain the collector/impeller and all moving parts have stopped.
7. Do not clear snow across the face of slopes. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
8. Never operate the snow shovel without proper guards, plates or other safety protective devices in place.
9. Never operate the snow shovel near glass enclosures, automobiles, window wells, etc. without proper adjustment of the snow discharge angle. Keep children and pets away.
10. Do not overload the machine capacity by attempting to clear snow at too fast a rate.
11. Never direct discharge at bystanders or allow anyone in front of the unit.
12. Disconnect the power supply when the snow shovel is transported or not in use.
13. Use only attachments and accessories approved by the manufacturer of the snow shovel.
14. Never operate the snow shovel without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.

MAINTENANCE AND STORAGE

1. Check the unit at frequent intervals to be sure the equipment is in safe working condition.
2. Always refer to owner's guide instructions for important details if the snow shovel is to be stored for an extended period.
3. Maintain or replace safety and instructions labels, as necessary.
4. Run the machine a few minutes after throwing snow to prevent freeze-up of the collector/impeller.
5. General maintenance written instructions shall be provided with the equipment for maintenance operations recommended by the manufacturer to maintain the equipment in safe operating condition.

SERVICE

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service please contact Mantis. A Mantis representative can direct you to an AUTHORIZED SERVICE CENTER for repair or provide the appropriate direction to best address your servicing issue. When servicing, use only identical replacement parts.

If the supply cord is damaged, it must replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Safety Rules & Warnings

⚠WARNING

To avoid serious personal injury, do not attempt to use this product until you have read this Owner's Manual thoroughly and understand it completely.

⚠WARNING

The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles or safety glasses with side shields and, when needed, a full face shield. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always use eye protection which is marked to comply with ANSI Z87.1.

Assembly

DESCRIPTION (Figure 1)

1. Trigger switch
2. Lock-out button
3. Auxiliary handle
4. Cord retainer
5. Lock knob
6. Height adjustment
7. Belt drive cover
8. Impeller
9. Scraper

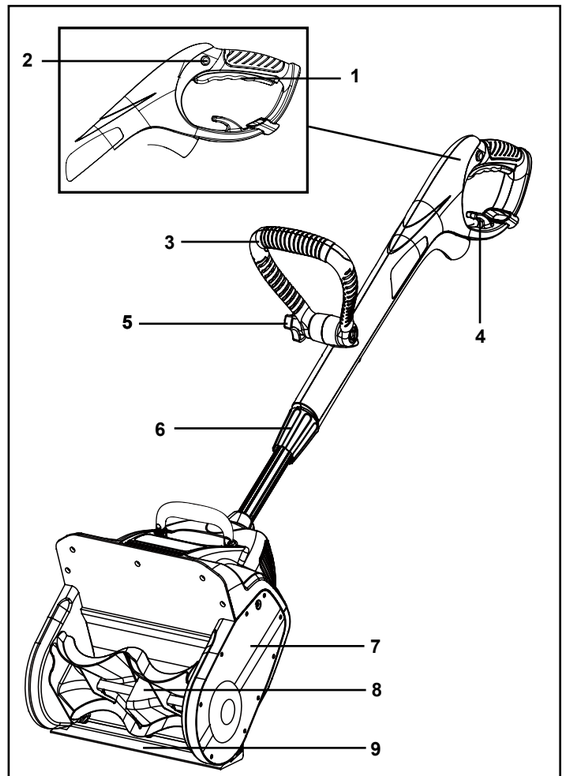


FIGURE 1

- Carefully remove the product and any accessories from the box. Make sure that all items listed in the packing list are included.
- Inspect the product carefully to make sure no breakage or damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the product.
- If any parts are damaged or missing, please contact Mantis for assistance.

PACKING LIST

- Snow shovel
- Owner's Manual

⚠WARNING

If any parts are damaged or missing, do not operate this product until the parts are replaced. Failure to heed this warning could result in serious personal injury.

⚠WARNING

Do not attempt to modify this product or create accessories not recommended for use with this product. Any such alteration or modification is misuse, and could result in a hazardous condition leading to possible serious personal injury.

⚠WARNING

Do not connect to power supply until assembly is complete. Failure to comply could result in accidental starting and possible serious personal injury.

⚠WARNING

Do not allow familiarity with this product to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.

USING THE CORD RETAINER (Figure 2)

This snow shovel is equipped with a cord retainer in order to prevent the extension cord from disconnecting from the power cord while the snow shovel is in use.

To use the cord retainer:

- Fold the extension cord to form a tight loop near the retainer.
- Push the loop through the bottom hole in the retainer.
- Slide the loop over the retaining clip, and pull down until the cord is secured.

⚠WARNING

Make sure not to pinch the power cord ; Make certain all nuts and bolts are tightened securely.

NOTE: Do not plug the extension cord into the outlet until it has been connected to the cord retainer and plugged into the snow shovel.

NOTE: Use a CSA or CuL-approved extension cord. A 100' (30.4 m), 14-gauge cord is recommended. A 50' (15.2 m), 16-gauge cord is also acceptable.

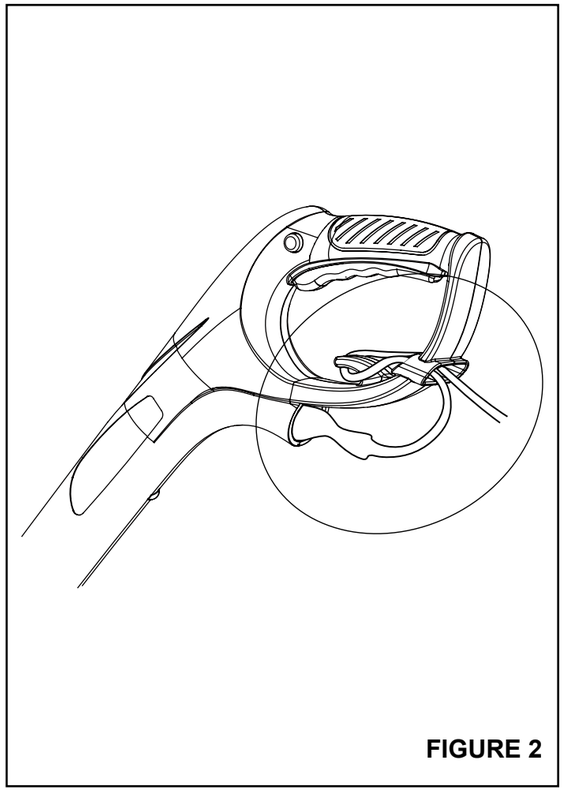


FIGURE 2

DOUBLE INSULATION

This snow shovel is "DOUBLE INSULATED"

⚠WARNING

In order to reduce the risk of electric shock when operating this snow shovel, use only a CSA-listed extension cord that is approved for outdoor use, such as Type SJTW, 16AWG, and that has a lower temperature rating of -40° F (-40° C).

- Ground Fault Circuit Interrupter (GFCI) protection should be provided on the circuit(s) or outlet(s) that will be used for this snow shovel. For an extra measure of safety, use a receptacle that has built-in GFCI protection.
- The nameplate on the snow shovel indicates the voltage used. Do not connect the snow shovel to an AC circuit that provides a different voltage from the voltage that is indicated on the nameplate.
- Inspect the extension cord and the power cord on a regular basis. Look for deterioration, cuts, or cracks in the insulation. Inspect the connections for damage. Repair or replace the extension cord or the power cord if any damage is found.
- Verify that the rotor and all moving parts have come to a complete stop, and disconnect the snow shovel from the power supply in order to prevent accidental start-ups before cleaning or performing any inspections or repairs.
- Do not abuse the extension cord. Do not carry the snow shovel by the power cord or pull on the cord in order to disconnect it from the receptacle.
- Keep the extension cord away from heat, oil, and sharp edges in order to prevent damage.
- If the extension cord is damaged in any manner while it is plugged in, disconnect it from the outlet immediately.
- Prevent any possible disconnection of the power cord from the extension cord while the snow shovel is in use by using the cord retainer and guide bar. Refer to the section entitled Using the Cord Retainer.
- Avoid accidental start-ups. Do not carry the snow shovel with a finger on the switch while it is plugged in. Verify that the switch is in the "OFF" position before plugging in the snow shovel.
- Unplug the snow shovel and allow it to cool down before putting it into storage. Store the snow shovel indoors.
- Unplug the snow shovel when it is not in use and before performing any maintenance or repairs.

⚠WARNING

In order to prevent electric shock, use an extension cord that is suitable for outdoor use.

MINIMUM GAUGE FOR EXTENSION CORDS (AWG)

(WHEN USING 120 V ONLY)

Amp Rating		Total Length of Cord in Feet (meters)			
More Than	Not More Than	25' (7.6 m)	50' (15 m)	100' (30.4 m)	150' (45.7 m)
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not Recommended	

Operation

STARTING THE SNOW SHOVEL (Figure 3-4)

Avoid accidental start-ups. Verify that the operator is in the starting position when using the snow shovel. In order to avoid serious injury, the operator and unit must be in a stable position when starting the snow shovel.

Follow this sequence exactly in order to start the snow shovel.

- Verify that the snow shovel is plugged in.
- Press and hold the lock-out button.
- While holding the lock-out button, press and hold the trigger switch.
- Hold the handles and begin to use the snow shovel.

NOTE: The snow shovel will not start if the lock-out button is not held until the trigger switch is lifted.

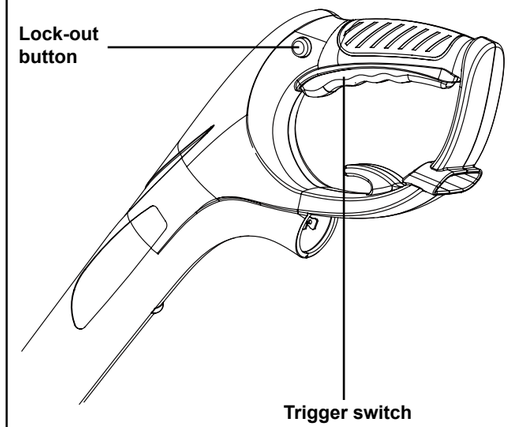


FIGURE 3

STOPPING THE SNOW SHOVEL

- Release the trigger switch.
- The lock-out button will pop out, and the snow shovel will stop.

USING THE SNOW SHOVEL

- Start the snow shovel by following the Starting instructions. The depth and weight of the snow will determine the forward speed.
- Push the snow shovel forward so that it rides on the scraper.
- Verify that the power cord is attached to the cord retainer. The power cord should trail to the side of the operator.

OPERATING TIPS

- Clear away the snow immediately after snowfall.
- For complete snow clearance, slightly overlap each clearance pass.
- If possible, discharge the snow downwind.
- For safety and to prevent damage to the snow shovel, keep the area to be cleared free of stones, toys and other foreign objects.

AFTER USE

- Stop the motor.
- Disconnect the electric cable from the snow shovel and the property's power socket.
- Allow the snow shovel to cool for 30 minutes.
- Clean the inside and outside of the snow shovel with a suitable brush.
- Check that there are no damaged or loose parts. Repair/ replace parts if necessary.

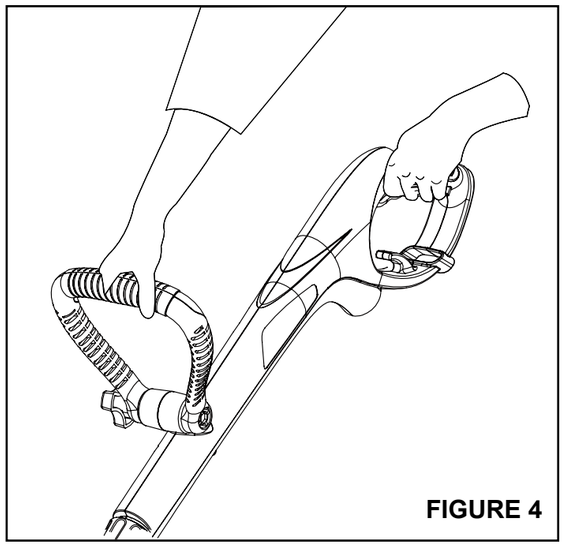


FIGURE 4

⚠WARNING

The snow shovel must never be rinsed with water. Risk of damage to the electrical system and risk of electric shocks.

Storage & Transportation

STORAGE

- Allow the motor to cool down before storing.
- Store the snow shovel in a locked location in order to prevent unauthorized use or damage.
- Store the snow shovel in a dry, well-ventilated area.
- Store the snow shovel out of the reach of children.

CLEANING

Use a small brush to clean the outside of the snow shovel. Do not use strong detergents. Household cleaners that contain aromatic oils such as pine and lemon, and solvents such as kerosene can damage the plastic housing and handles. Wipe off any moisture using a soft cloth.

⚠WARNING

In order to avoid serious personal injury, turn the Snow Shovel off and unplug it before cleaning or servicing.

FIGURE 5

TRANSPORTING THE SNOW SHOVEL

(Figure 5)

- Allow the motor to cool down before transporting.
- Secure the snow shovel while transporting.
- When moving the snow shovel, grasp it by the top and auxiliary handles.

INSPECTING/REPLACING THE DRIVE BELT
(Figure 6-8)

When servicing the snow shovel, use only the manufacturer's original replacement parts. Inspect the drive belt for wear once per year or every 50 hours of operation, whichever comes first. If the drive belt needs to be replaced, follow these steps.

In order to avoid serious personal injury, turn off the snow shovel and allow it to cool down. Unplug the snow shovel before performing any maintenance.

- Using a 17-mm wrench or socket, remove the nut from the left hand side of the impellor shaft (Fig. 6).
- Remove the ten (10) screws from the belt cover using a phillips screwdriver. Remove the belt cover (Fig. 7).
- Remove the flange lock nut and the washer from the impeller pulley shaft (Fig. 7).
- Remove 3 screws from the impeller pulley bracket shown in (Fig. 7).
- Remove the impeller pulley bracket (Fig. 7).
- Pull the belt tensioner (idler arm) away from the drive pulley. Remove the damaged or broken belt from the impeller pulley and the drive pulley inside the housing. Discard the belt in the proper manner (Fig. 8).
- Loop the new belt around the drive pulley and the impeller pulley (Fig. 8). Pull the belt tensioner (idler arm) away from the drive pulley in order to install the belt around the drive pulley.

NOTE: Verify that the washer is still in place on the impeller pulley shaft before reinstalling the belt cover.

- Reinstall the impeller pulley bracket with the three (3) screws.
- Reinstall the washer and the flange lock nut. Tighten the nut.
- Reinstall the belt cover with the ten (10) screws. In order to facilitate the installation, position the narrow part of the cover into the recess of the housing and install the two top screws and then push the rest of the cover down into recess and over the rotor shaft. Tighten all ten (10) screws.

⚠WARNING

In order to reduce the risk of electric shock, replace the cover before connecting the snow shovel to a power source.

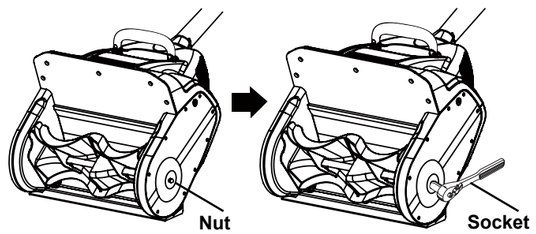


FIGURE 6

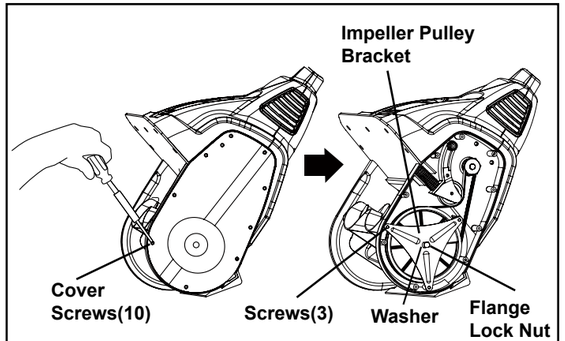


FIGURE 7

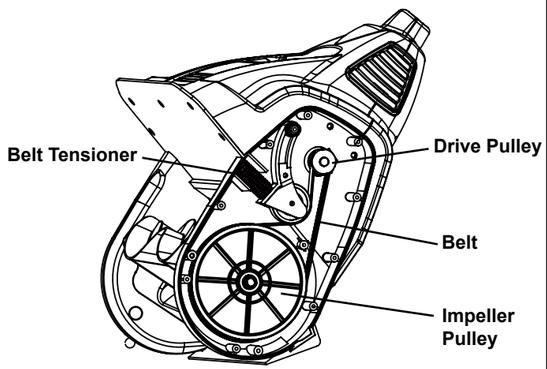


FIGURE 8

REPLACING THE SCRAPER (Figure 9)

⚠WARNING

In order to avoid serious personal injury, turn the snow shovel off and unplug it before performing any maintenance.

Use only the manufacturer's original replacement parts.

- Place the snow shovel on the ground or on a work bench. Position the snow shovel so that the impeller is facing up.
- Remove the three (3) screws that are located beneath the impeller that secure the scraper to the housing using a phillips screwdriver (Fig. 9).
- Remove the scraper, and discard it in the proper manner.
- Snap the new scraper into position, and attach it to the snow shovel by reinstalling the three (3) screws.

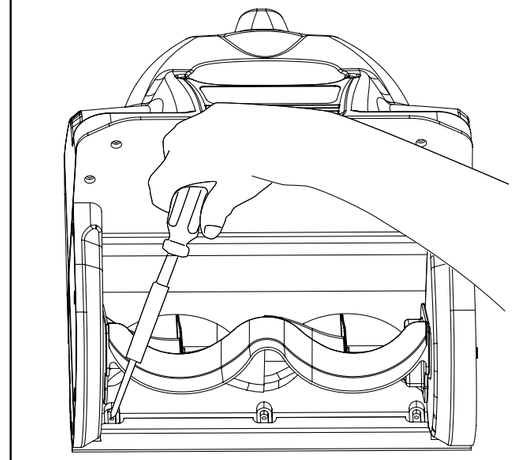
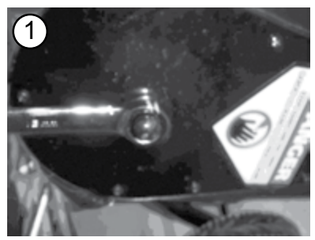


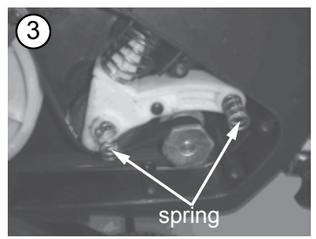
FIGURE 9

IMPELLOR REPLACEMENT

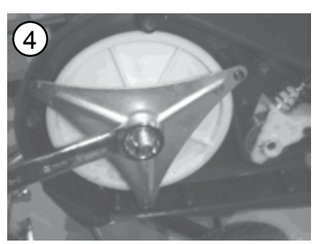


- Remove the nut from the left hand side of the impellor shaft.

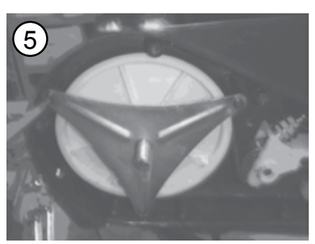
- Remove the 10 screws from the side cover.



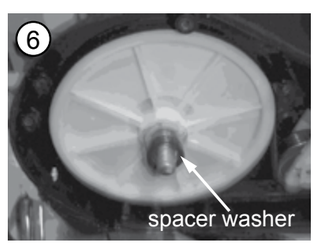
- Be sure not to lose the 2 springs.



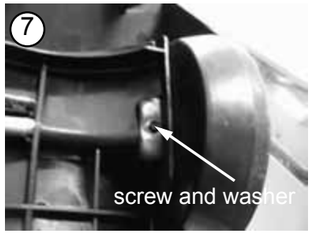
- Remove the nut from the impellor shaft.



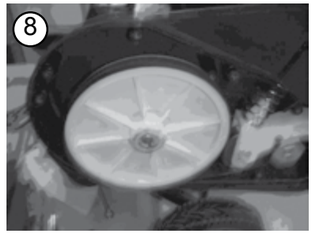
- Remove the 3 screws holding the pulley support plate.



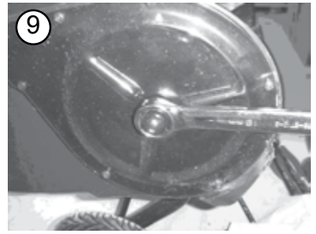
- Remove the plate and the two spacer washers.



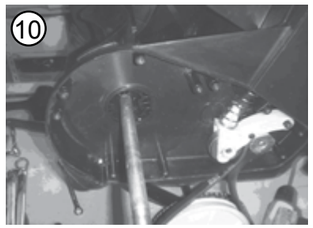
- Remove the 2 screws and 2 washers.



- Remove the pulley and belt.

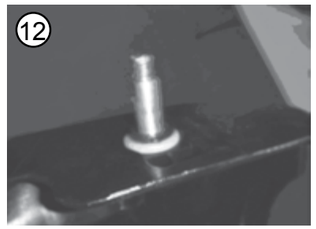


- Remove the impellor shaft nut from the right hand side.

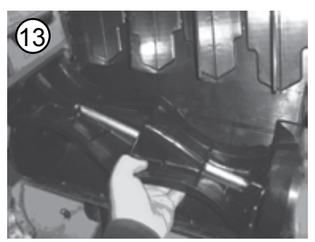


- Withdraw the impellor shaft from the left hand side.

- Withdraw the old/damaged impellor. Be sure to keep the 2 spacer washers from the right hand side of the impellor.

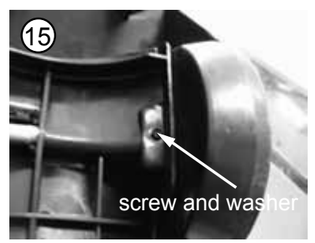


- Insert the impellor shaft in the new impellor and place the 2 washers on the right hand side.

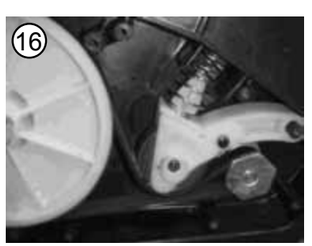


- Place the impellor and shaft back into the front scoop.

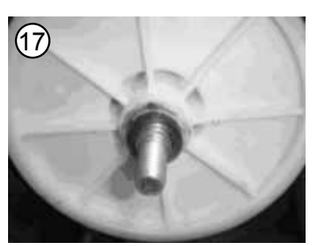
- Place the pulley back onto the impellor shaft.



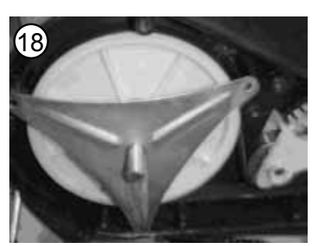
- Replace the 2 screws and 2 washers onto the impellor.



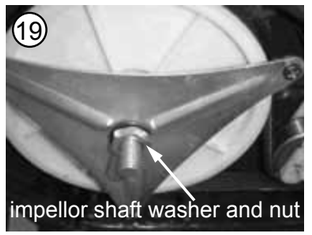
- Be sure to route the belt correctly, as shown.



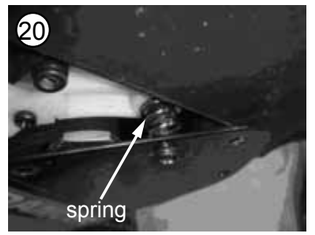
- Replace the 2 spacer washers on the impellor shaft.



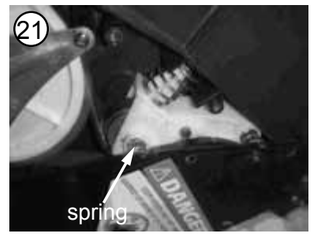
- Replace the pulley support plate and the 3 retaining screws.



- Replace and tighten the impellor shaft washer and nut.



- Place the upper spring into position and then finger tighten the cover plate into place as shown.

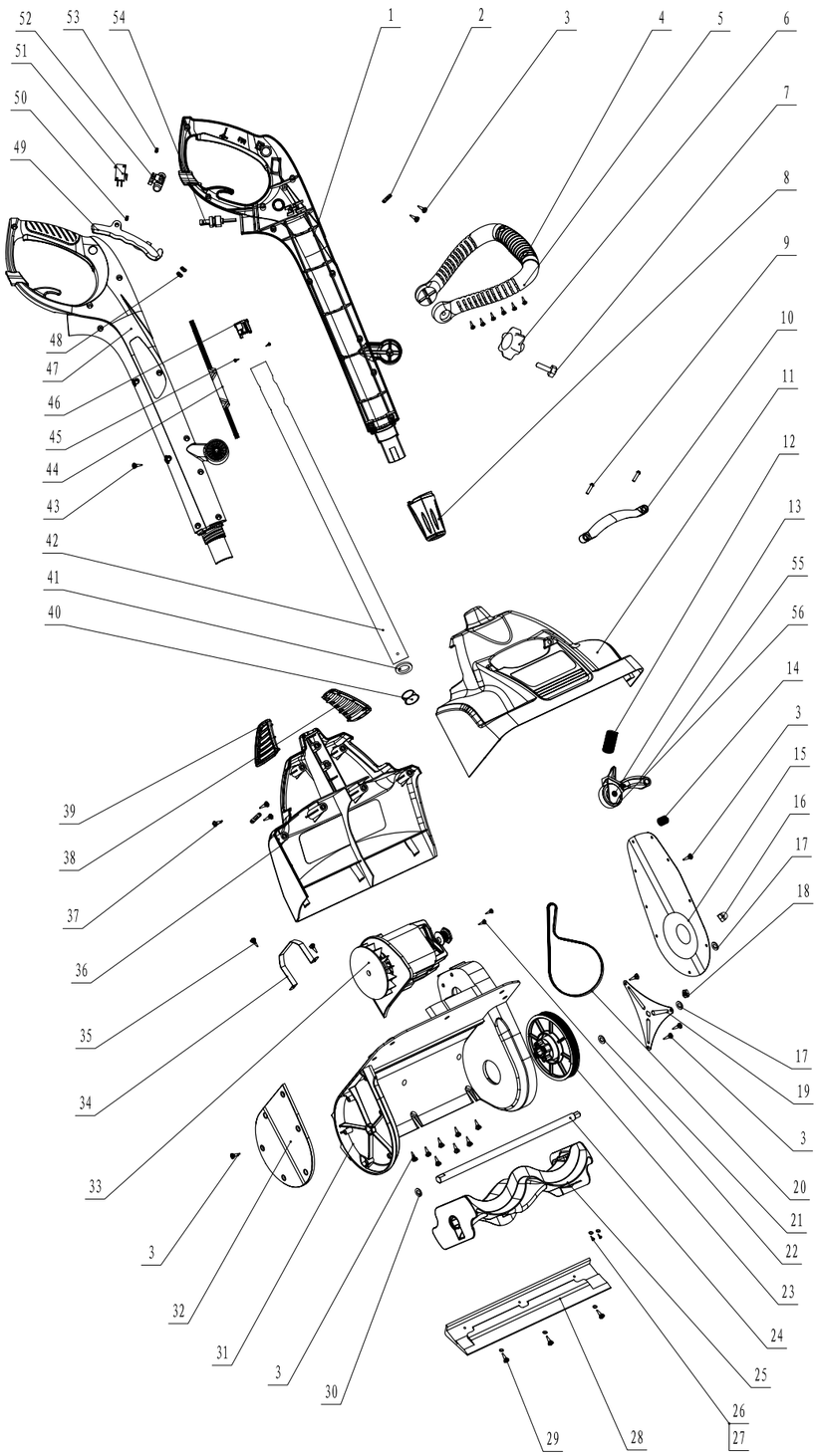


- Place the lower spring into position and slide the side cover up using slight pressure to hold the spring in place.

- Replace and tighten the remaining screws and the nut and washer.

- Re-install the impellor shaft nut and washer on the right hand side, and tighten.

Parts section



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Parts section

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	3410298A-11	Left upper handle	1
2	3410801	Wire clip	2
3	3220298	Screw ST4x15-F	52
4	3411998A-11	Auxiliary handle assembly I	1
5	3412298A-11	Auxiliary handle assembly II	1
6	3412698-11	Knob	1
7	3220698	Bolt	1
8	3410598-11	Knob	1
9	3220398	Screw	2
10	3412398-1	Carry bar	1
11	3410898-11	Front housing	1
12	3390198	Spring	1
13	3411698	Tension wheel pressing plate	1
14	3390298	Spring	2
15	3330298-1	Left cover	1
16	3220998	Cover nut M10	1
17	3290499	Washer	2
18	3220236	Nut M10	1
19	3330198-12	Impeller pulley bracket	1
20	3290198	Belt	1
21	3220898	Washer	3
22	3220598	Screw M5x18	3
23	3111298A	Impeller pulley assembly	1
24	3320198-12	Impellor shaft	1
25	3411398-3	Impellor assembly	1
26	32206302A	Screw M4x12	2
27	3290350	Washer ø4	2
28	3412098A	Snow spade	1
29	3225599	Screw 4x13	3
30	32261198	Washer 2.5x13	1
31	3411298	Lower housing	1
32	3411798	Right cover	1
33	3111498-1	Motor assembly	1
34	3330398-12	Motor mounting bar	1
35	3220475	Screw ST4.8x15	2
36	3410998-11	Rear housing	1
37	3221199	Screw ST4x18-F	3
38	3411098-1	Left grill assembly	1
39	3411198-1	Right grill assembly	1
40	34202625	Power cord sleeve	1
41	34201625	Rubber sealing ring	1
42	33208098-11	Tube	1
43	3220323	Screw ST4x10-F	5
44	36410098	Spring wire	1
45	32201198	Screw ST3.5x8-C	2
46	34108098	Tube sleeve	1
47	3410198A-11	Right upper handle	1
48	3650135	B terminal	2
49	3410398-11	Switch trigger	1
50	3340111	Spring	1
51	3630129	Toggle switch	1
52	3410498-11	Lock-out switch	1
53	3340398-12	Spring	1
54	3640298	Inner connecter	1
55	3411598	Soporte de la rueda de tensión	1
56	3210298	Bearing	1

Troubleshooting

PROBLEM	CAUSE	REMEDY
1. The snow shovel does not start.	• The snow shovel is unplugged. • The lock-out button or trigger switch were not used properly.	• Verify that the snow shovel is plugged into an electrical outlet. • Press and hold the lock-out button, and then lift and hold the trigger switch (see the section entitled Starting the snow shovel).
2. The motor is on, but the rotor does not turn.	• The belt is damaged.	• Replace the belt (see the section entitled Inspecting/Replacing the Drive Belt).
3. The snow shovel leaves a thin layer of snow behind.	• The scraper is worn.	• Replace the scraper (see the section Replacing the Scraper).

LIMITED WARRANTY

MANTIS extends this limited warranty against defects in material and workmanship for a period of two (2) years under normal usage for residential purposes from the date of purchase by the original purchaser.

MANTIS will repair or replace, at its discretion, any part or parts of the product found to be defective in material or workmanship during the warranty period. Warranty repairs and replacements will be made without charge for parts or labor. All parts replaced under warranty will be considered as part of the original product, and any warranty on the replaced parts will expire coincident with the original product warranty. If you think your MANTIS ELECTRIC SNOW THROWER is defective in material or workmanship contact Mantis and you will be instructed to send it, along with your proof of purchase (sales receipt) to:

Mantis
1028 Street Road
Southampton, PA 18966

You are responsible for pickup and delivery charges; the product must be returned to us postage paid.

MANTIS assumes no responsibility in the event that the product was not assembled or used in compliance with any assembly, care, safety, or operating instructions contained in the Owner’s Manual or accompanying the product. This limited warranty does not cover damages or defects due to normal wear and tear, lack of reasonable and proper maintenance, failure to follow operating instructions or owner’s manual, misuse, lack of proper storage or accidents [or routine maintenance parts and service]. This limited warranty shall not be effective if your Mantis electric snow thrower has been subjected to negligence or has been repaired or altered by anyone other than Mantis or Mantis authorized dealer or authorized service center.

You must maintain your MANTIS ELECTRIC SNOW THROWER by following the maintenance procedures described in the owner’s manual. Such routine maintenance, whether performed by you or a dealer, is at your expense.

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